

To: Robert Law[rlaw@demaximis.com]
Cc: Willard Potter[otto@demaximis.com]
From: LaPoma, Jennifer
Sent: Mon 6/20/2016 7:38:49 PM
Subject: Follow up on RI comment 179

Rob,

As mentioned last week during our June 16 RI comment meeting, below is further clarification to RI comment 179.

EPA's clarification on RI Comment 179:

There appears to be some misunderstanding of how the term "protection" is being interpreted here. As used in the last sentence of the original comment, "protection of carp...." is not intended to imply that we are specifically wanting to protect this particular species (*Cyprinus carpio*), but instead this species represents an upper-bound exposure of an omnivorous benthic fish. For the reasons cited in the original comment, carp are likely among the most highly exposed omnivorous benthic fish species in the system, and surely is the most highly exposed fish species for which we have contaminant data (tissue). The carp data set also represents the most complete fish tissue data set for the river, with samples (n=10) from river mile 3 to the Dundee Dam for both file and whole body for the omnivorous benthic fish. Catfish (channel and white) and white sucker were not as evenly distributed or obtained in great numbers. Therefore, it is reasonable and appropriate to assume that if carp are at acceptable risk from contaminant exposure, most or possibly all other fish for which we do not have tissue data are likely to also be at acceptable risk.

It is recognized that carp can cause localized adverse effects on aquatic microhabitats due to foraging behavior (e.g., disturbance of surface sediments). However, it must be also recognized that some native and "desirable" fish, such as ictalurids (bullhead and catfish), also forage in a similar manner. Aquatic environments supporting carp often support diverse and abundant aquatic invertebrate and fish communities. Fish survey data from numerous locations across the nation reveal that the presence of carp does not preclude diverse and abundant fish communities. The fact that common carp are not native (and are considered invasive) does not preclude using carp as a surrogate in the BERA for highly exposed bottom dwelling fish for which we have no meaningful abundance or toxicity data. Further, risk managers need to know the risks for all resident species regardless of whether they are invasive or "undesirable" species so that appropriate risk management decisions can be made. An additional note that should be included in this discussion is that in many cases, the species of carp that are being identified in headlines and articles are not the common carp, but instead are other species of carp (e.g., silver carp, Asian carp, bighead carp).

For these reasons, it is critical that the BERA include carp as a representative aquatic receptor, and that carp be fully evaluated in the BERA for risks due to exposure to sediment-associated contaminants. Such evaluations should include evaluations of risk (1) to fish represented by carp based on comparisons of contaminant concentrations in whole body carp to whole body tissue-

based (residue) TRVs, preferably those based on LOAELs for survival, growth, or reproduction; and (2) to higher trophic level piscivores based on consumption of carp (live and/or as carrion; dietary exposures). Residue-based TRVs should be species or genus specific if available – if not, then such TRVs should be based on other omnivorous freshwater fish species for which suitable data are available. It is appropriate to base evaluations of carp as dietary items for upper trophic level piscivores on composite samples where carp comprise one component of the composite sample. Such composites should be based on size ranges of fish (to bound the estimates) preferred as prey by the consumer rather than on fish species (i.e., diet of mixed fish species is acceptable).

Please let me know if CPG would like to discuss the topic further.

Thanks,

Jennifer LaPoma